

WHAT IS CLAIMED IS:

1. An electro-optical panel, comprising:
  - a first substrate;
  - a plurality of scanning lines and a plurality of data lines are formed on the first substrate;
  - a second substrate;
  - a first light-shielding layer beneath the second substrate that covers the scanning lines and the data lines when the electro-optical panel is assembled;
  - projecting patterns, formed on the first substrate or beneath the second substrate, to control the distance between the first substrate and the second substrate;
  - electro-optic material filled between the first substrate and the second substrate, the projecting patterns being formed such that all or part of each of the projecting patterns overlaps the corresponding data line; and
  - second light-shielding layers, to prevent light leakage due to the formation of the projecting patterns, formed so as to overlap the first light-shielding layer and all or part of each of the second light-shielding layers that also functions as the first light-shielding layer.
2. The electro-optical panel according to Claim 1, the center of the projecting pattern being formed on the corresponding data line.
3. An electro-optical panel, comprising:
  - a first substrate;
  - a plurality of scanning lines and a plurality of data lines formed on the first substrate;
  - a second substrate;
  - a first light-shielding layer beneath the second substrate that covers the scanning lines and the data lines when the electro-optical panel is assembled;
  - projecting patterns, formed on the first substrate or beneath the second substrate, to control the distance between the first substrate and the second substrate;
  - electro-optic material filled between the first substrate and the second substrate, the projecting patterns being formed such that all or part of each of the projecting patterns overlaps the corresponding scanning line; and
  - second light-shielding layers, to prevent light leakage due to the formation of the projecting patterns, formed so as to overlap the first light-shielding layer and all or part of each of the second light-shielding layers that also functions as the first light-shielding layer.

4. The electro-optical panel according to Claim 3, the center of the projecting pattern being formed on the corresponding scanning line.

5. An electro-optical panel, comprising:

a first substrate;

a plurality of scanning lines, a plurality of data lines, and a plurality of capacitive lines formed on the first substrate;

a second substrate;

a first light-shielding layer beneath the second substrate that covers the scanning lines and the data lines when the electro-optical panel is assembled;

projecting patterns, formed on the first substrate or beneath the second substrate, to control the distance between the first substrate and the second substrate;

electro-optic material filled between the first substrate and the second substrate, the projecting patterns being formed such that all or part of each of the projecting patterns overlaps the corresponding capacitive line; and

second light-shielding layers, to prevent light leakage due to the formation of the projecting patterns formed so as to overlap the first light-shielding layer and all or part of each of the second light-shielding layers that also functions as the first light-shielding layer.

6. The electro-optical panel according to Claim 5, the center of the projecting pattern being formed on the corresponding capacitive line.

7. An electro-optical panel, comprising:

a first substrate;

a plurality of scanning lines, a plurality of data lines, and a plurality of capacitive lines formed on the first substrate;

a second substrate;

a first light-shielding layer beneath the second substrate that covers the scanning lines and the data lines when the electro-optical panel is assembled;

projecting patterns, formed on the first substrate or beneath the second substrate, to control the distance between the first substrate and the second substrate;

electro-optic material filled between the first substrate and the second substrate, all or part of each of the projecting patterns being formed so as to overlap an area surrounded by the corresponding scanning line, data line, and capacitive line; and

second light-shielding layers to prevent light leakage due to the formation of the projecting patterns formed so as to overlap the first light-shielding layer and all or part of each of the second light-shielding layers also functions as the first light-shielding layer.

8. The electro-optical panel according to Claim 7, the center of the projecting pattern being formed in the area surrounded by the corresponding scanning line, data line, and capacitive line.

9. The electro-optical panel according to Claim 8, the projecting pattern being provided on the upside of the direction of rubbing with respect to the corresponding data line.

10. The electro-optical panel according to Claim 1, the second light-shielding layers being provided on the downside of the direction of rubbing on the first light-shielding layer.

11. An electro-optical panel, comprising:

a first substrate;

a plurality of scanning lines and a plurality of data lines formed on the first substrate;

transmissive areas through which light is transmitted and reflective areas from which the light is reflected being formed on areas surrounded by the data lines and the scanning lines;

a second substrate;

a first light-shielding layer beneath the second substrate that covers the scanning lines and the data lines when the electro-optical panel is assembled;

projecting patterns, formed on the first substrate or beneath the second substrate, to control the distance between the first substrate and the second substrate;

electro-optic material filled between the first substrate and the second substrate, the projecting patterns being formed so as to overlap the first light-shielding layer;

second light-shielding layers to prevent light leakage due to the formation of the projecting patterns formed so as to overlap the first light-shielding layer and all or part of each of the second light-shielding layers also functions as the first light-shielding layer; and

each of the reflective areas being formed on the downside of the direction of rubbing with respect to the corresponding projecting pattern.

12. An electro-optical panel, comprising:

a first substrate;

a plurality of scanning lines and a plurality of data lines formed on the first substrate;

transmissive areas through which light is transmitted and reflective areas from which the light is reflected being formed on areas surrounded by the data lines and the scanning lines;

a second substrate;

a first light-shielding layer beneath the second substrate that covers the scanning lines and the data lines when the electro-optical panel is assembled;

projecting patterns, formed on the first substrate or beneath the second substrate, to control the distance between the first substrate and the second substrate;

electro-optic material filled between the first substrate and the second substrate, the projecting patterns being formed so as to overlap the first light-shielding layer;

second light-shielding layers to prevent light leakage due to the formation of the projecting patterns formed so as to overlap the first light-shielding layer and all or part of each of the second light-shielding layers also functions as the first light-shielding layer; and

color filters including blue color filters being formed on the first substrate or beneath the second substrate, and each of the blue color filters being formed on the downside of the direction of rubbing with respect to the corresponding projecting pattern.

13. An electro-optical panel, comprising:

a first substrate;

a plurality of scanning lines and a plurality of data lines formed on the first substrate;

transmissive areas through which light is transmitted and reflective areas from which the light is reflected being formed on areas surrounded by the data lines and the scanning lines;

a second substrate;

a first light-shielding layer beneath the second substrate that covers the scanning lines and the data lines when the electro-optical panel is assembled;

projecting patterns, formed on the first substrate or beneath the second substrate, to control the distance between the first substrate and the second substrate;

electro-optic material filled between the first substrate and the second substrate, the projecting patterns being formed so as to overlap the first light-shielding layer;

second light-shielding layers to prevent light leakage due to the formation of the projecting patterns are formed so as to overlap the first light-shielding layer and all or part of each of the second light-shielding layers also functions as the first light-shielding layer; and

color filters being formed on the first substrate or beneath the second substrate, and third light-shielding layers formed so that the color filters having the same color have apertures with the same area.

14. An electro-optical panel, comprising:

- a first substrate;
- a plurality of scanning lines and a plurality of data lines formed on the first substrate;

transmissive areas through which light is transmitted and reflective areas from which the light is reflected being formed on areas surrounded by the data lines and the scanning lines;

- a second substrate;
- a first light-shielding layer beneath the second substrate that covers the scanning lines and the data lines when the electro-optical panel is assembled;
- projecting patterns, formed on the first substrate or beneath the second substrate, to control the distance between the first substrate and the second substrate;
- electro-optic material filled between the first substrate and the second substrate, color filters of blue, green, and red being formed on the first substrate or beneath the second substrate,

the projecting patterns being formed so as to overlap the first light-shielding layer for every predetermined number of rows and being arranged such that the pair of colors of the color filters that are laterally adjacent to each projecting pattern is different for every row and all the pairs of colors appear for every predetermined number of rows; and

second light-shielding layers to prevent light leakage due to the formation of the projecting patterns formed so as to overlap the first light-shielding layer and all or part of each of the second light-shielding layers also functions as the first light-shielding layer.

15. An electro-optical panel, comprising:

- a first substrate;
- a plurality of scanning lines and a plurality of data lines are formed on the first substrate;

transmissive areas through which light is transmitted and reflective areas from which the light is reflected being formed on areas surrounded by the data lines and the scanning lines;

- a second substrate;
- a first light-shielding layer beneath the second substrate that covers the scanning lines and the data lines when the electro-optical panel is assembled;
- projecting patterns, formed on the first substrate or beneath the second substrate, to control the distance between the first substrate and the second substrate; and

electro-optic material filled between the first substrate and the second substrate,

the projecting patterns being formed on flat areas over the first light-shielding layer, and second light-shielding layers to prevent light leakage due to the formation of the projecting patterns formed so as to overlap the first light-shielding layer and all or part of each of the second light-shielding layers also functions as the first light-shielding layer.

16. Electronic equipment having the electro-optical panel according to Claim 1.